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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/994,814 | 11/28/2001 | Nobuyuki Yamaguchi | KAT 236 | 9777 |

23995 7590 09/04/2003

RABIN & CHAMPAGNE, PC
1101 14TH STREET, NW
SUITE 500
WASHINGTON, DC 20005

EXAMINER

BARBEE, MANUEL L

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| ART UNIT | PAPER NUMBER |
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2857

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,814

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Manuel L. Barbee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,8,9 and 12 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,7,10,11,13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Reference sign "104" identifying the final decider in Figure 4, as shown on page 13, paragraph 13 of the specification. Reference sign "JL" identifying a control signal, as shown on page 13, paragraph 13 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 13, paragraph 30, line 2 of the paragraph, delete "25B", and insert --25A--.

Appropriate correction is required.

Claim Objections

3. Claims 1-3, 9 and 10 are objected to because of the following informalities:

In claim 1, line 23 of the claim, delete "which", and insert --and--.

In claim 2, line 3 of the claim, delete "adequate", and insert --adequately--.

In claim 10, line 9 of the claim, after "determining", insert --the--.

In claim 3, line 11 of the claim, after "determining", insert --,--.

In claim 3, line 12 of the claim, after "result", insert --, the--.

In claim 9, line 3 of the claim, delete "adequate", and insert --adequately--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent No. 4,797,931) in view of Hasegawa (US Patent No. 6,026,419).

With regard to a rough frequency analyzing circuit, as shown in claims 1 and 8, Furukawa et al. teach band pass filters and integrators for each band to be analyzed (col.1 lines 35 - col. 2, line 5; Figure 1, band pass filters 110-117, integrators 120-127).

With regard to a plurality of fine frequency analyzing circuits, as shown in claims 1 and 8, Furukawa et al. teach an identification parameters calculator for calculating more specific parameters for each band including power (col. 2, line 20 - col. 5, line 36).

Furukawa et al. do not teach a control circuit for selectively enabling and disabling the fine frequency analyzing circuits, as shown in claims 1 and 8.

Hasegawa teaches a tone detector that includes a control circuit for selecting values for use in comparators, which effectively selects certain bands of frequencies (col. 6, lines 39 -48; Figure 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the frequency identification apparatus,

as taught by Furukawa et al. to include selecting particular bands of frequencies for further calculation, as taught by Hasegawa, because then less calculation would be necessary for the frequency evaluation (Hasegawa, col. 2, lines 25-29).

With regard to a selecting circuit for further selecting one of the second results, as shown in claims 2 and 9, Furukawa et al. teach an identification and judgment processor for deciding the tone using results from the identification parameter calculator (Figure 1, judgment processor 160).

6. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. in view of Hasegawa as applied to claims 1 and 8 above, and further in view of Denenberg (US Patent No. 3,937,899).

Furukawa et al. and Hasegawa teach all the limitations of claim 1 upon which claim 5 depends and claim 8 upon which claim 12 depends. With regard to filters and power calculators for each subband, as shown in claim 5, Furukawa et al. further teach bandpass filters and integrators for each subband (Figure 1, bandpass filters 110-117, integrators 210-217; col. 2, lines 54-65). Furukawa et al. and Hasegawa do not teach a plurality of comparators for comparing the power calculated with an associated threshold value and roughly distinguishing the tonal signals in accordance with the results, as shown in claims 5 and 12. Denenberg teaches comparison circuits for comparing power of a signal source with thresholds for input to a decision circuit (Abstract, Figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify frequency identification combination, as taught by Furukawa et al. and Hasegawa, to include comparators, as taught by Denenberg,

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because then power requirements would have been checked before using more processing power.

Allowable Subject Matter

7. Claims 4, 6, 7, 11, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: Neither Furukawa et al. nor Hasewaga teach a selecting circuit with a second comparator connected to the first comparator, as shown in claims 4 and 11. Neither Furukawa et al. nor Hasewaga teach a threshold control circuit, as shown in claims 6 and 13. Neither Furukawa et al. nor Hasewaga teach a detection validity calculating circuit that includes a signal power coefficient calculator, a detection stability calculator, a tone duration ratio calculator and a detection validity calculating circuit, as shown in claims 7 and 14.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Atkin (US Patent No. 4,119,808) teaches multi-frequency receiver circuits.

Mori et al. (US Patent No. 4,127,846) teach a tone signal detecting circuit.

Shankland (US Patent No. 4,398,147) teaches testing multifrequency dialing signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 703-308-0979. The examiner can normally be reached on Monday-Friday from 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 703-308-1677. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0976.

mlb
August 25, 2003

